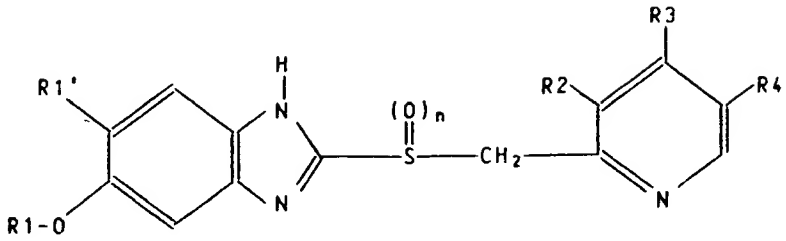
WHAT IS CLAIMED IS:

1. A dialkoxypyridine of formula I



(I),

wherein

R1 is 1-3C-alkyl which is completely or predominantly substituted by fluorine, or chlorodifluoromethyl;

R1' is a hydrogen atom, halo, trifluoromethyl, 1-3C-alkyl, or 1-3C-alkoxy which is ~~optionally~~ unsubstituted or completely or predominantly substituted by fluorine; or

R1 and R1', together with the oxygen atom to which R1 is bonded, is 1-2C-alkylenedioxy which is optionally completely or partly substituted by fluorine, or chlorotrifluoroethylenedioxy;

R3 is 1-3C-alkoxy;

one of R2 and R4 is 1-3C-alkoxy and the other is a hydrogen atom or 1-3C-alkyl; and

n is 0 or 1;

or a salt thereof.

2. A compound according to claim 1 wherein

R1 is 1-3C-alkyl which is completely or predominantly substituted by fluorine, or chlorodifluoromethyl;

R1' is a hydrogen atom, halo, trifluoromethyl, 1-3C-alkyl, or 1-3C-alkoxy which is ~~optionally~~ unsubstituted or completely or predominantly substituted by fluorine;

R3 is 1-3C-alkoxy;

one of R2 and R4 is 1-3C-alkoxy and the other is a hydrogen atom or 1-3C-alkyl; and

n is 0 or 1, or

a salt thereof.

3. A compound according to claim 1 wherein,

R1 and R1', together with the oxygen atom to which R1 is bonded, is 1-2C-alkylenedioxy which is ~~optionally~~ unsubstituted or completely or partly substituted by fluorine, or chlorotrifluoroethylenedioxy,

R3 is 1-3C-alkoxy;

one of R2 and R4 is 1-3C-alkoxy and the other is a hydrogen atom or a 1-3C-alkyl radical and

n is 0 or 1, or a salt thereof.

4. A compound according to claim 2, wherein R1' is a hydrogen atom and R1, R2, R3, R4 and n have their previously-ascribed meanings, or a salt thereof.

5. A compound according to claim 2 wherein R1 is 1,1,2,2-tetrafluoroethyl, trifluoromethyl, 2,2,2-trifluoroethyl, difluoromethyl or chlorodifluoromethyl, R1' is a hydrogen atom, R3 is methoxy, one of R2 and R4 is methoxy and the other is a hydrogen atom or methyl and n is 0 or 1, or a salt thereof.

6. A compound according to claim 2, wherein R1 is 1,1,2,2-tetrafluoroethyl, trifluoromethyl, 2,2,2-trifluoroethyl or difluoromethyl, R1' is a hydrogen atom, R3 is methoxy, one of R2 and R4 is methoxy and the other is a hydrogen atom or methyl and n is 0 or 1, or a salt thereof.

7. A compound according to claim 4, 5, or 6, wherein R2 is a hydrogen atom or methyl and R3 and R4 are methoxy, or a salt thereof.

8. A compound according to claim 4, 5 or 6, wherein R4 is a hydrogen atom and R2 and R3 are methoxy, or a salt thereof.

9. A compound according to claim 3, wherein R1 and R1', together with the oxygen atom to which R1 is bonded, are 1-2C-alkylenedioxy, and R2, R3, R4 and n have the meanings given in claim 3, or a salt thereof.

10. A compound according to claim 3, wherein R1 and R1', together with the oxygen atom to which R1 is bonded, are

methylenedioxy or ethylenedioxy, and R2, R3, R4 and n have the meanings given in claim 3, or a salt thereof.

11. A compound according to claim 3, wherein R1 and R1', together with the oxygen atom to which R1 is bonded, are 1-2C-alkylenedioxy which is completely or partly substituted by fluorine and R2, R3, R4 and n have the meanings given in claim 3, or a salt thereof.

12. A compound according to claim 3, wherein R1 and R1', together with the oxygen atom to which R1 is bonded, are difluoromethylenedioxy or 1,1,2-trifluoroethylenedioxy and R2, R3, R4 and n have the meanings given in claim 3, or a salt thereof.

13. A compound according to claim 3 wherein R1 and R1', together with the oxygen atom to which R1 is bonded, are difluoromethylenedioxy or methylenedioxy and R2, R3, R4 and n have the meanings given in claim 3, or a salt thereof.

14. A compound according to claims 9, 10, 11, 12 or 13, wherein R2 is a hydrogen atom or methyl, R3 is methoxy, R4 is methoxy, or a salt thereof.

15. A compound according to claims 9, 10, 11, 12 or 13, wherein R2 is methoxy, R3 is methoxy, and R4 is a hydrogen atom or methyl, or a salt thereof.

16. A compound according to claims 9, 10, 11, 12, or 13, wherein R2 is methoxy, R3 is methoxy and R4 is methyl, or a salt thereof.

17. A compound according to ~~one of claims 1 to 16~~ claim 1, wherein n is 0, or an acid addition salt thereof.

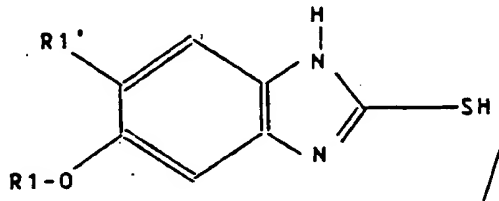
18. A compound according to ~~one of claims 1 to 16~~ claim 1, wherein n is 1, or a salt thereof with a base.

19. A compound ~~according to claim 1~~ selected from the group consisting of 2-[(4,5-dimethoxy-2-pyridyl)methylsulfinyl]-5-trifluoromethoxy-1H-benzimidazole, 2-[(4,5-dimethoxy-3-methyl-2-pyridyl)methylsulfinyl]-5-trifluoromethoxy-1H-benzimidazole, 2-[(4,5-dimethoxy-2-pyridyl)-methysulfinyl]-5-(1,1,2,2-tetrafluoroethoxy)-1H-benzimidazole, 2,2-difluoro-6-[(4,5-dimethoxy-2-pyridyl)methylthio]-5H-[1,3]-dioxolo-

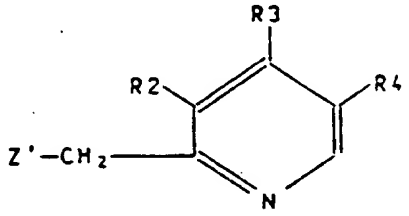
[4,5-f]benzimidazole and 2,2-difluoro-6-[(4,5-dimethoxy-2-pyridyl)methylsulfinyl]- 5H-[1,3]-dioxolo-[4,5-f]benzimidazole, or a salt thereof.

20. A process for the preparation of a dialkoxypyridine according to claim 1, or a salt thereof, which comprises

a) reacting a mercaptobenzimidazole of formula II with a picoline derivate III



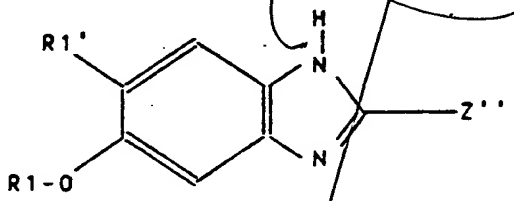
(II)



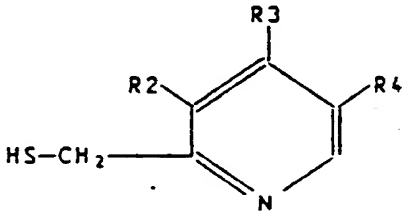
(III).

or

b) reacting a benzimidazole of formula IV with a mercaptopicoline V

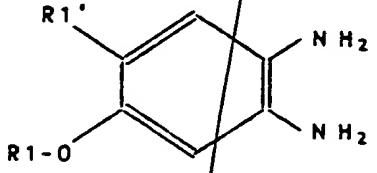


(IV)

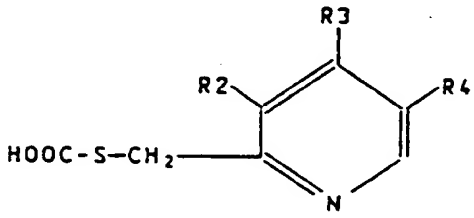


(V).

or c) reacting an o-phenylenediamine of formula VI with a formic acid derivative VII

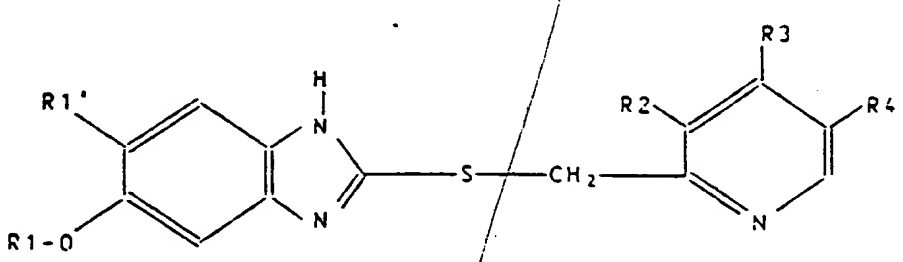


(VI)



(VII).

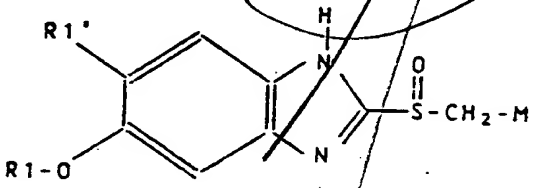
and, if appropriate, then oxidizing and/or converting into a salt a 2-benzimidazolyl 2-pyridylmethylsulfide of formula VIII obtained according to (a), (b) or (c)



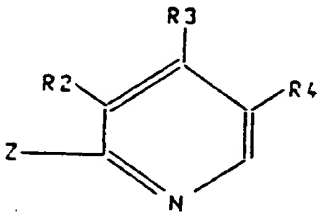
(VIII).

or

d) reacting a benzimidazole of formula IX with a pyridine derivative X



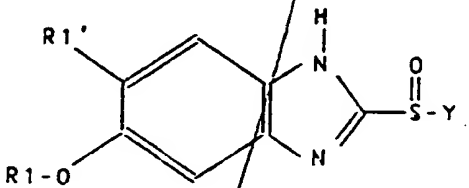
(IX)



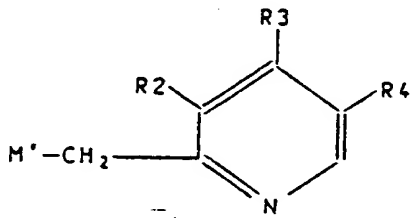
(X).

or

e) reacting a sulfinyl derivative of formula XI with a 2-picoline derivative XII



(XI)



(XII).

and, optionally converting the products into salts, Y, Z, Z' and Z'' being suitable leaving groups, M being an alkali metal atom (Li, Na or K), M' being an equivalent of a metal atom and R1, R1', R2, R3, R4 and n having the meanings given in claim 1.

~~21.~~ A pharmaceutically - acceptable compound which is a dialkoxypyridine according to ~~one of claims 1 to 19~~ claim 1 or a salt thereof.

22. A medicament composition comprising an active ingredient and a pharmaceutical auxiliary, the active ingredient comprising from 0.1 to 95 percent by weight of at least one pharmaceutically -acceptable compound according to claim 21.

23. A composition of claim 22 further comprising a known compound which inhibits gastric acid secretion.

~~24.~~ A method for treatment or prophylaxis of illness based on excessive secretion of hydrochloric acid by the stomach which comprises administering an effective amount of a compound according to claim ~~21~~ 20 to a mammal suffering from said illness.

~~25.~~ A method for providing protective action for the stomach and intestines which comprises administering an effective amount of a compound according to claim ~~21~~ 20 to a mammal.

June 10, 1985 B. Cloëtl
June 10, 1985 Georg Rainer
June 10, 1985 Ernst Strunz